Amendments to the Claims
This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.   (Previously Presented) A method for converting image data of an image from a lower bit depth representation to a higher bit depth representation, the image having a saturation region wherein a color model value of each individual pixel in the saturation region is one of: above an upper saturation threshold and below a lower saturation threshold, the method comprising:
        identifying pixels in the saturation region; and
        adjusting the color model value of one or more individual pixels in the saturation region by a corresponding adjustment, a magnitude of each adjustment dependent, at least in part, on a number of pixels between the corresponding pixel and an edge of the saturation region.

2.   (Original) A method according to claim 1 comprising identifying pixels in the saturation region by scanning the color model values of pixels in the image data along a first scan axis to determine a start pixel at one edge of a saturation region and an end pixel at another edge of the saturation region.

3.   (Previously Presented) A method according to claim 1 comprising determining the magnitude of each adjustment based, at least in part, on a function of the number of pixels between the corresponding pixel and the edge of the

saturation region, wherein the function has an extremum in
the saturation region.

4.   (Original) A method according to claim 3 comprising
        identifying pixels in the saturation region by scanning the
        color model values of pixels in the image data along a first
        scan axis to determine a start pixel at one edge of a
        saturation region and an end pixel at another edge of the
        saturation region.

5.   (Original) A method according to claim 4 wherein the
        extremum of the function is located substantially midway
        between the start pixel and the end pixel.

6.   (Original) A method according to claim 5 wherein the
        function comprises a parabola having a vertex located
        substantially midway between the start pixel and the end
        pixel.

7.   (Previously Presented) A method according to claim 4 wherein
        the magnitude of the function at the extremum depends, at
        least in part, on a number of pixels between the start pixel
        and the end pixel.

8.   (Previously Presented) A method according to claim 4 wherein
        the magnitude of the function at the extremum is determined
        on the basis of at least one of: a gradient between the
        color model values of the start pixel and at least one pixel
        preceding the start pixel and a gradient between the color
        model values of the end pixel and at least one pixel
        following the end pixel.

9.   (Previously Presented) A method according to claim 5 wherein
      the function is one of linearly monotonically increasing and
      linearly monotonically decreasing from the start pixel
      toward a pixel located substantially midway between the
      start pixel and the end pixel and wherein the function is
      the other of linearly monotonically increasing and linearly
      monotonically decreasing from the pixel located
      substantially midway between the start pixel and the end
      pixel toward the end pixel.

10.   (Previously Presented) A method according to claim 4 wherein
      a value of the function is unity for at least one of: the
      start pixel and the end pixel.

11.   (Original) A method according to claim 2 comprising
      determining the magnitude of each adjustment based, at least
      in part, on a number of pixels between the start pixel and
      the end pixel.

12.   (Original) A method according to claim 2 comprising
      determining the magnitude of each adjustment on the basis of
      at least one of: a gradient between the color model values
      of the start pixel and at least one pixel preceding the
      start pixel and a gradient between the color model values of
      the end pixel and at least one pixel following the end
      pixel.

13.   (Original) A method according to claim 4 comprising
      determining a location of the extremum on the basis of at
      least one of: a gradient between the color model values of
      the start pixel and at least one pixel preceding the start

pixel and a gradient between the color model values of the
end pixel and at least one pixel following the end pixel.

14.   (Previously Presented) A method according to claim 1
       comprising determining the magnitude of each adjustment
       based, at least in part, on a number of pixels in the
       saturation region.

15.   (Previously Presented) A method according to claim 1
       comprising determining the magnitude of each adjustment
       based, at least in part, on a gradient between the color
       model values of at least one pixel on the edge of the
       saturation region and at least one pixel outside of the
       saturation region.

16.   (Previously Presented) A method according to claim 1
       comprising determining the magnitude of each adjustment
       based, at least in part, on one or more temporally previous
       values of the color model value for the corresponding pixel.

17.   (Previously Presented) A method according to claim 1
       comprising determining the magnitude of each adjustment
       based, at least in part, on one or more other color model
       values for the corresponding pixel.

18.   (Previously Presented) A method according to claim 1
       comprising determining the magnitude of each adjustment
       based, at least in part, on: detecting a lens flare pattern
       surrounding the saturation region; and using a model of the
       lens flare pattern to predict color model values of the
       pixels in the saturation region.

19. (Previously Presented) A method according to claim 1 comprising initially adjusting the color model values of the pixels in the image data to form an intermediate higher bit depth representation of the image data and wherein adjusting the color model value of each of the individual pixels in the saturation region is performed on pixels of the intermediate higher bit depth representation.

20. (Original) A method according to claim 19 wherein initially adjusting the color model values of the pixels in the image data comprises at least one of: scaling the color model values of the pixels in the image data; and offsetting the color model values of the pixels in the image data.

21. (Original) A method according to claim 20 comprising scaling the color model values of the pixels in the image data and wherein scaling color model values of the pixels in the image data is uniform as between pixels in the image data.

22. (Original) A method according to claim 19 wherein identifying pixels in a saturation region is performed on pixels of the intermediate higher bit depth representation.

23. (Previously Presented) A method according to claim 2 wherein scanning color model values of pixels in the image data along a first scan axis comprises determining start and end pixels for one or more additional saturation regions within a line of pixels, wherein the color model value of each individual pixel in the one or more additional saturation regions is one of: above the upper saturation threshold and below the lower saturation threshold.

24. (Original) A method according to claim 23 comprising adjusting the color model value of each of the individual pixels in the one or more additional saturation regions by a corresponding adjustment, a magnitude of each adjustment for each pixel in each of the one or more additional saturation regions dependent, at least in part, on a number of pixels between the corresponding pixel and at least one of: the start pixel of the additional saturation region and the end pixel of the additional saturation region.

25. (Previously Presented) A method according to claim 2 comprising repeating scanning color model values for a plurality of lines of pixels of the image data along the first scan axis and adjusting the color model value of each of the individual pixels in each saturation region until the entire image has been scanned and adjusted along the first scan axis.

26. (Original) A method according to claim 25 comprising repeating scanning color model values for a plurality of lines of pixels of the image data along a second scan axis and adjusting the color model value of each of the individual pixels in each saturation region until the entire image has been scanned and adjusted along the second scan axis.

27. (Original) A method according to claim 26 comprising combining color model values of image data scanned and adjusted along the first scan axis with color model values of image data scanned and adjusted along the second scan axis to form the higher bit depth representation.

28.   (Original) A method according to claim 27 wherein combining
        color model values comprises obtaining an average of color
        model values of image data scanned and adjusted along the
        first scan axis with color model values of image data
        scanned and adjusted along the second scan axis.

29.   (Original) A method according to claim 27 wherein combining
        color model values comprises obtaining an average of color
        model values of image data scanned and adjusted along the
        first scan axis with color model values of image data
        scanned and adjusted along the second scan axis to obtain
        intermediate values and blurring groups of two or more
        adjacent pixels of the intermediate values to form the
        higher bit depth representation.

30.   (Previously Presented) A method according to claim 1
        comprising adjusting the color model value of each of the
        individual pixels in the saturation region by scaling the
        color model value of each of the individual pixels in the
        saturation region by a corresponding scaling factor.

31.   (Previously Presented) A method according to claim 1 wherein
        the color model values comprise a mathematical combination
        of other color model values.

32.   (Previously Presented) A method according to claim 1
        comprising, after adjusting the color model values of the
        individual pixels in the saturation region, further
        adjusting the color model values of all of the pixels in the
        image data to maximize the range of the color model values
        in the higher bit depth representation.

33.   (Previously Presented) A computer program product comprising
      a non-transitory medium carrying computer readable
      instructions which, when executed by a processor, cause the
      processor to execute a method for converting image data from
      a lower bit depth representation to a higher bit depth
      representation, the method comprising:

           identifying pixels in a saturation region wherein a
      color model value of each individual pixel in the saturation
      region is one of: above an upper saturation threshold and
      below a lower saturation threshold; and

           adjusting the color model value of each of the
      individual pixels in the saturation region by a
      corresponding adjustment, a magnitude of each adjustment
      dependent, at least in part, on a number of pixels between
      the corresponding pixel and an edge of the saturation
      region.

34.   (Original) A system for processing image data, the system
      comprising a processor for converting image data from a
      lower bit depth representation to a higher bit depth
      representation, the processor configured to:

           identify pixels in a saturation region wherein a color
      model value of each individual pixel in the saturation
      region is one of: above an upper saturation threshold and
      below a lower saturation threshold; and

           adjust the color model value of each of the individual
      pixels in the saturation region by a corresponding
      adjustment, a magnitude of each adjustment dependent, at
      least in part, on a number of pixels between the
      corresponding pixel and an edge of the saturation region.

35.   (Previously Presented) A system according to claim 34, the
       processor configured to identify pixels in the saturation
       region by scanning the color model values of pixels in the
       image data along a first scan axis to determine a start
       pixel at one edge of a saturation region and an end pixel at
       another edge of the saturation region.

36.   (Previously Presented) A system according to claim 34, the
       processor configured to determine the magnitude of each
       adjustment based, at least in part, on a function of the
       number of pixels between the corresponding pixel and the
       edge of the saturation region, wherein the function has an
       extremum in the saturation region.

37.   (Previously Presented) A system according to claim 36, the
       processor configured to identify pixels in the saturation
       region by scanning the color model values of pixels in the
       image data along a first scan axis to determine a start
       pixel at one edge of a saturation region and an end pixel at
       another edge of the saturation region.

38.   (Previously Presented) A system according to claim 37
       wherein the extremum of the function is located
       substantially midway between the start pixel and the end
       pixel.

39.   (Previously Presented) A system according to claim 37
       wherein the magnitude of the function at the extremum
       depends, at least in part, on a number of pixels between the
       start pixel and the end pixel.

40. (Previously Presented) A system according to claim 37
     wherein the magnitude of the function at the extremum is
     determined on the basis of at least one of: a gradient
     between the color model values of the start pixel and at
     least one pixel preceding the start pixel and a gradient
     between the color model values of the end pixel and at least
     one pixel following the end pixel.

41. (Previously Presented) A system according to claim 37
     wherein a value of the function is unity for at least one
     of: the start pixel and the end pixel.

42. (Previously Presented) A system according to claim 37, the
     processor configured to determine a location of the extremum
     on the basis of at least one of: a gradient between the
     color model values of the start pixel and at least one pixel
     preceding the start pixel and a gradient between the color
     model values of the end pixel and at least one pixel
     following the end pixel.

43. (Previously Presented) A system according to claim 35, the
     processor configured to determine the magnitude of each
     adjustment based, at least in part, on a number of pixels
     between the start pixel and the end pixel.

44. (Previously Presented) A system according to claim 35, the
     processor configured to determine the magnitude of each
     adjustment on the basis of at least one of: a gradient
     between the color model values of the start pixel and at
     least one pixel preceding the start pixel and a gradient

between the color model values of the end pixel and at least one pixel following the end pixel.

45.   (Previously Presented) A system according to claim 35, the processor configured to repeat scanning color model values for a plurality of lines of pixels of the image data along the first scan axis and to adjust the color model value of each of the individual pixels in each saturation region until the entire image has been scanned and adjusted along the first scan axis.

46.   (Previously Presented) A system according to claim 45, the processor configured to repeat scanning color model values for a plurality of lines of pixels of the image data along a second scan axis and to adjust the color model value of each of the individual pixels in each saturation region until the entire image has been scanned and adjusted along the second scan axis.

47.   (Previously Presented) A system according to claim 46, the processor configured to combine color model values of image data scanned and adjusted along the first scan axis with color model values of image data scanned and adjusted along the second scan axis to form the higher bit depth representation.

48.   (Previously Presented) A system according to claim 34, the processor configured to determine the magnitude of each adjustment based, at least in part, on a number of pixels in the saturation region.

49.   (Previously Presented) A system according to claim 34, the
       processor configured to determine the magnitude of each
       adjustment based, at least in part, on a gradient between
       the color model values of at least one pixel on the edge of
       the saturation region and at least one pixel outside of the
       saturation region.

50.   (Previously Presented) A system according to claim 34, the
       processor configured to determe the magnitude of each
       adjustment based, at least in part, on one or more
       temporally previous values of the color model value for the
       corresponding pixel.

51.   (Previously Presented) A system according to claim 34, the
       processor configured to determine the magnitude of each
       adjustment based, at least in part, on one or more other
       color model values for the corresponding pixel.

52.   (Previously Presented) A system according to claim 34, the
       processor configured to determine the magnitude of each
       adjustment based, at least in part, on: detecting a lens
       flare pattern surrounding the saturation region; and using a
       model of the lens flare pattern to predict color model
       values of the pixels in the saturation region.

53.   (Previously Presented) A system according to claim 34, the
       processor configured to adjust the color model value of each
       of the individual pixels in the saturation region by scaling
       the color model value of each of the individual pixels in
       the saturation region by a corresponding scaling factor.

54.   (Previously Presented) A system according to claim 34
      wherein the color model values comprise a mathematical
      combination of other color model values.

55.   (Previously Presented) A system according to claim 34, the
      processor configured, after adjusting the color model values
      of the individual pixels in the saturation region, to
      further adjust the color model values of all of the pixels
      in the image data to maximize the range of the color model
      values in the higher bit depth representation.

56.   (New) A system for processing image data, the system
      comprising a signal processing unit configured to convert
      image data from a lower bit depth representation to a higher
      bit depth representation, the signal processing unit
      configured to:
            identify pixels in a saturation region wherein a color
      model value of each individual pixel in each saturation
      region is one of: above an upper saturation threshold and
      below a lower saturation threshold;
            identify, using a two dimensional analysis of pixels of
      the image data, a pattern related to the saturation region;
            adjust the color model value of each of the individual
      pixels in the saturation region by a corresponding
      adjustment, a magnitude of the adjustment to each individual
      pixel based, at least in part, on the identified pattern;
      and
            convert the low bit depth representation of the image
      data to a higher bit depth representation, thereby
      accommodating the adjusted color model values in the higher
      dynamic range of the higher bit depth representation while

preserving a color fidelity in regions of the image data
outside the saturation region.

57.   (New) A system according to claim 56 wherein the identified
      pattern comprises a two-dimensional area of the saturation
      region.

58.   (New) A system according to claim 56 wherein the identified
      pattern comprises a gradient of pixels surrounding the
      saturation region.

59.   (New) A system according to claim 56 wherein the identified
      pattern comprises a presence of a lens flare feature.

60.   (New) A system according to claim 59 wherein the lens flare
      feature comprises at least one of: a sun dog; and a halo.

61.   (New) A system according to claim 56 wherein the adjustment
      to each individual pixel is based, at least in part, on a
      model of the identified pattern.

62.   (New) A system according to claim 56 wherein the image data
      comprises video data comprising multiple image frames and
      the identified pattern comprises a temporal pattern.

63.   (New) A system according to claim 62 wherein the temporal
      pattern comprises a number of frames for which a region has
      been saturated.

64. (New) A system according to claim 56 wherein the identified pattern comprises multiple saturation regions separated by non-saturated regions.

65. (New) A method for converting image data from a lower bit depth representation to a higher bit depth representation, the method comprising:

identifying pixels in a saturation region wherein a color model value of each individual pixel in each saturation region is one of: above an upper saturation threshold and below a lower saturation threshold;

identifying, using a two dimensional analysis of pixels of the image data, a pattern related to the saturation region;

adjusting the color model value of each of the individual pixels in the saturation region by a corresponding adjustment, a magnitude of the adjustment to each individual pixel based, at least in part, on the identified pattern; and

converting the low bit depth representation of the image data to a higher bit depth representation, thereby accommodating the adjusted color model values in the higher dynamic range of the higher bit depth representation while preserving a color fidelity in regions of the image data outside the saturation region.

66. (New) A method according to claim 65 wherein the identified pattern comprises a two-dimensional area of the saturation region.

67. (New) A method according to claim 65 wherein the identified pattern comprises a gradient of pixels surrounding the saturation region.

68. (New) A method according to claim 65 wherein the identified pattern comprises a presence of a lens flare feature.

69. (New) A method according to claim 68 wherein the lens flare feature comprises at least one of: a sun dog; and a halo.

70. (New) A method according to claim 65 wherein the adjustment to each individual pixel is based, at least in part, on a model of the identified pattern.

71. (New) A method according to claim 65 wherein the image data comprises video data comprising multiple image frames and the identified pattern comprises a temporal pattern.

72. (New) A method according to claim 71 wherein the temporal pattern comprises a number of frames for which a region has been saturated.

73. (New) A method according to claim 65 wherein the identified pattern comprises multiple saturation regions separated by non-saturated regions.